

SPECIFICATIONS	Model	50TM21.5							
		TM-series 1.5kW, 3-phase							
<p><b>Type of Pump</b> Submersible semi-vortex pump made of titanium and resin suitable for pumping seawater</p> <p><b>Type of Fluid</b> Seawater</p> <p>Temperature: 0 to 40°C</p> <p><b>Discharge Bore</b> 50mm</p> <p><b>Motor Output</b> 1.5kW</p> <p><b>Power Supply</b> Three-phase</p> <p><b>Starting Method</b> Direct on Line</p> <p><b>Motor</b> Continuous-duty rated, dry-type induction motor</p> <p>Insulation Class: E Degree of Protection: IP68</p> <p>No. of Poles &amp; Speed (Synchronous Speed) 2-pole, 3000/3600min<sup>-1</sup> (50/60Hz)</p> <p>Power Supply Voltages &amp; Rated Currents</p> <table border="0"> <tr> <td>50Hz</td> <td>60Hz</td> </tr> <tr> <td>380V – 4.1A</td> <td>220V – 6.6A</td> </tr> <tr> <td>400V – 4.0A</td> <td>380V – 3.9A</td> </tr> <tr> <td>415V – 4.0A</td> <td>440V – 3.6A</td> </tr> </table> <p><b>Power Cable</b> Sheath: PVC Standard Length: 6m 200 to 600V supply: 1 × 4 × 1.25mm<sup>2</sup>, O.D. 11.1mm</p> <p><b>Dry Weight (excluding cable)</b> Standard Model: 14.9kg Automatic Model: 15.6kg</p>	50Hz	60Hz	380V – 4.1A	220V – 6.6A	400V – 4.0A	380V – 3.9A	415V – 4.0A	440V – 3.6A	<p><b>Impeller</b> Vortex impeller designed for “high-gap structure”, made of glass-fiber reinforced PPO</p> <p>Solids Passage 50Hz – <math>\phi</math>20mm 60Hz – <math>\phi</math>20mm</p> <p><b>Cable Entry with Anti-Wicking Block</b> Watertight cable entry with strain-relief device. The anti-wicking block prevents water incursion due to capillary action should the power cable be damaged or the end submerged.</p> <p><b>Bearings</b> Permanently lubricated, deep-groove, double-shielded C3 ball bearings</p> <p><b>Shaft</b> Titanium</p> <p><b>Shaft Seal (Mechanical Seal)</b> Furnished with a double-face mechanical seal located in oil chamber. Both upper and lower seal faces always run in a clean environment.</p> <p>Upper Seal Faces: Ceramic + Carbon Lower Seal Faces: SiC + SiC</p> <p><b>OIL LIFTER (Patented)</b> Equipped in oil chamber. It forcibly supplies lubricating oil to the mechanical seal and continues to supply the oil to the upper seal faces even if lubricant falls below the rated volume.</p> <p>Type of Lubricating Oil &amp; Volume Liquid Paraffin (ISO VG32), 500ml</p> <p><b>Motor Protection Device</b> A circle thermal protector built in the motor housing. Directly cuts the motor circuit if excessive heat builds up or an overcurrent condition occurs in the motor.</p>
50Hz	60Hz								
380V – 4.1A	220V – 6.6A								
400V – 4.0A	380V – 3.9A								
415V – 4.0A	440V – 3.6A								

NO. A-17735-1

# PUMP PERFORMANCE CURVES

TYPE Sea Water Submersible Titanium Seawater Pump	MODEL 50TM21.5 -51 50TMA21.5 -51	FREQUENCY 50 Hz
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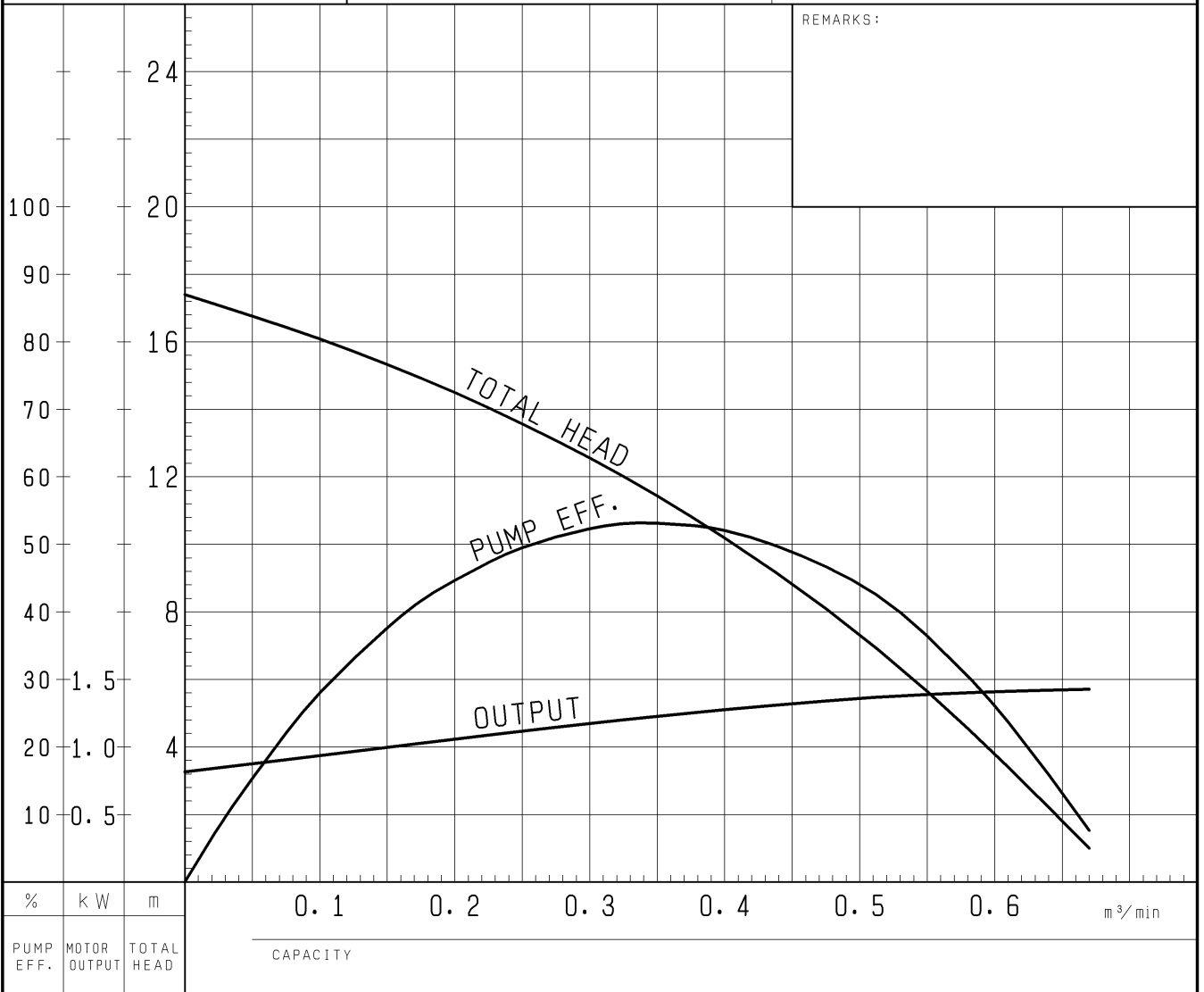
CUSTOMER'S NAME \_\_\_\_\_

EQUIPMENT TITLE \_\_\_\_\_

NO. \_\_\_\_\_

	STANDARD SPECIFICATIONS	REQUIRED SPECIFICATIONS
DISCHARGE BORE	50 mm	mm
TOTAL HEAD	14.5 m	m
CAPACITY	0.2 m <sup>3</sup> /min	m <sup>3</sup> /min
MOTOR OUTPUT	1.5 kW	kW
PHASE x VOLTAGE	3 $\phi$ x 200 V	$\phi$ x V
CURRENT	A	A
POLES / REVOLUTION	2 P / s. s. 3000 min <sup>-1</sup>	P / min <sup>-1</sup>
STARTING METHOD	DIRECT ON LINE	
INSULATION CLASS	E	

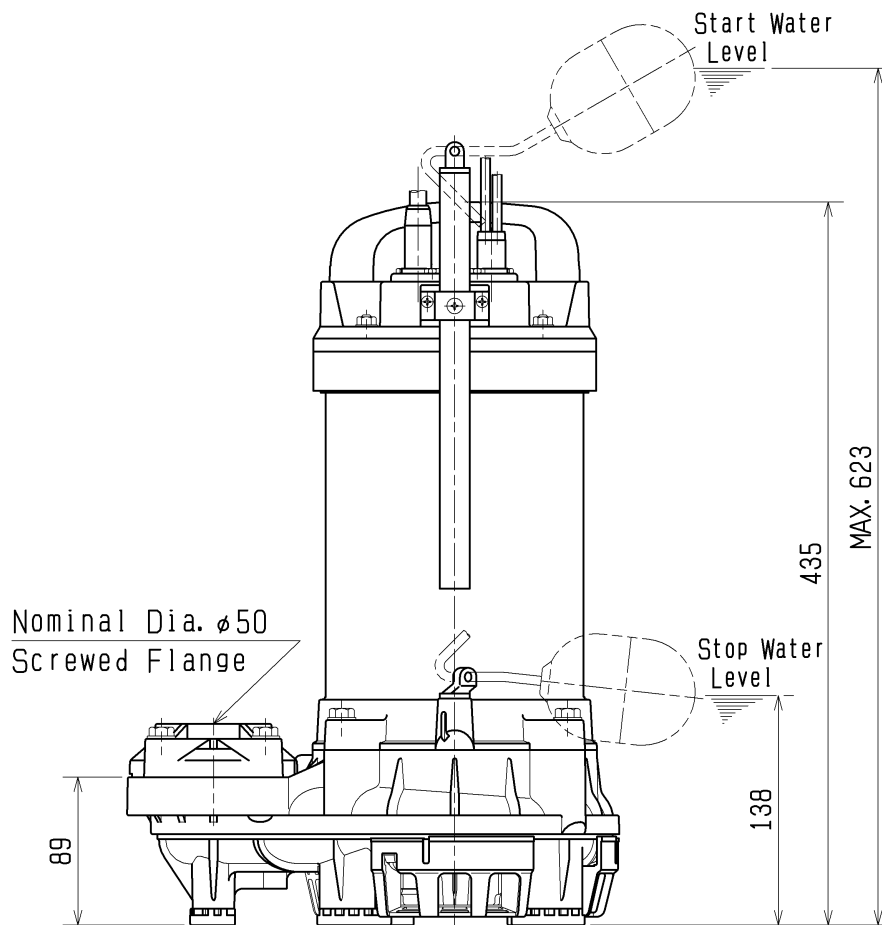
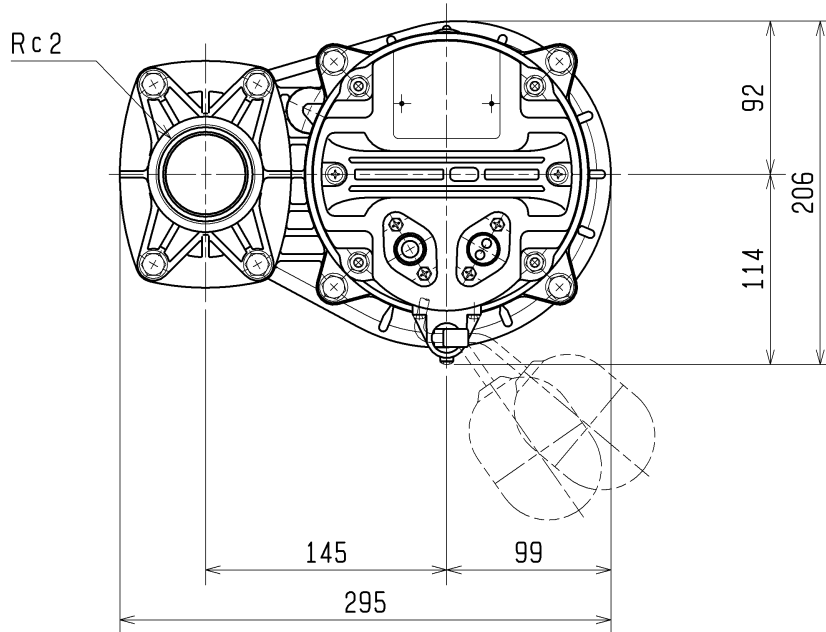
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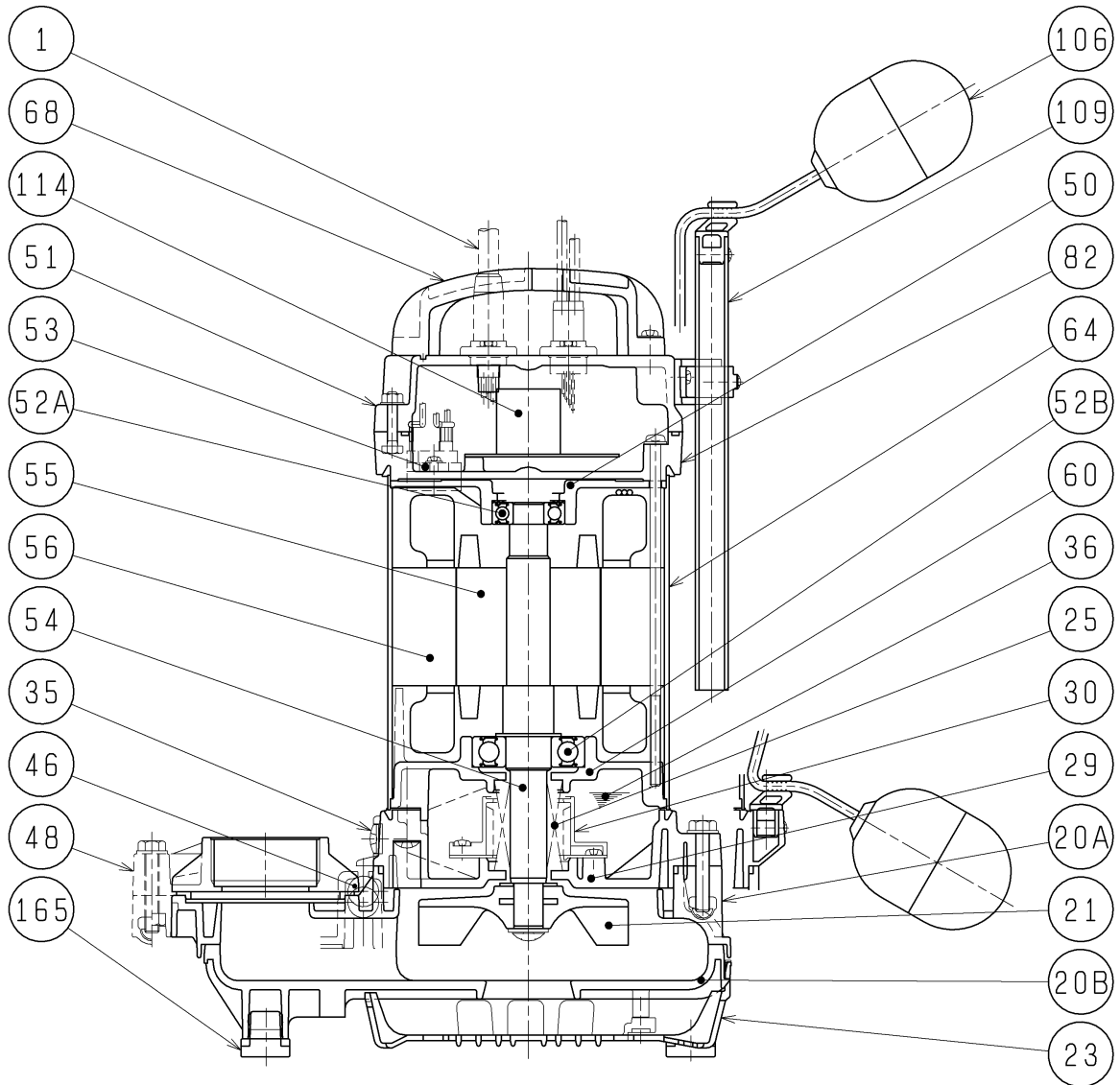
TSURUMI MFG. CO., LTD.

DIMENSION DRAWING		No.	No. A-17738-1
TYPE Sea Water Submersible Titanium Seawater Pump (Automatic)		MODEL	50TMA21.5 -51/61

Approximate Weight (※)  
15.6kg  
※excluding cable



<b>SECTIONAL DRAWING</b>		No.	No. A-17740-2
TYPE Sea Water Submersible Titanium Seawater Pump (Automatic)		MODEL	50TMA21.5 -51/61



\* All metal parts (including cable gland, bolts, nuts, washers, etc.) contacting with liquid are made of TITANIUM.

※1 Upper and lower blocks form a one-piece casing.

※2 the wetted part

REQ. SPECIFICATION

No.	DESCRIPTION	Q'TY	MATERIAL / NOTE	No.	DESCRIPTION	Q'TY	MATERIAL / NOTE
1	Cabtyre Cable	1	PVC Sheath	52B	Lower Bearing	1	6305ZZC3
20A	Upper Pump Casing	※1	Plastic W/GF	53	Motor Protector	1	
20B	Lower Pump Casing	1	Plastic W/GF	54	Shaft	1	Titanium(※2)
21	Impeller	1	Plastic W/GF	55	Rotor	1	
23	Strainer	1	Plastic	56	Stator	1	
25	Mechanical Seal	1	H-20A	60	Bearing Housing	1	Aluminium Alloy Casting
29	Oil Casing	1	Plastic W/GF	64	Motor Frame	1	Titanium
30	Oil Lifter	1	Plastic	68	Handle	1	Plastic
35	Oil Plug	1	Titanium	82	Head Cover Spacer	1	Plastic W/GF
36	Lubricant		Liquid Paraffin (ISO VG32)	106	Float Set	2	Plastic
46	Air Release Valve	1	Glass Ball	109	Float Support Pipe	1	PVC
48	Screwed Flange	1	Plastic W/GF	114	Relay Unit	1	
50	Motor Bracket	1	Aluminium Alloy Casting	165	Rubber Foot	5	Nitrile Butadien Rubber
51	Head Cover	1	Plastic W/GF				
52A	Upper Bearing	1	6203ZZC3				